



Testimony
Before the Committee on Science
United States House of
Representatives

**CDC Bioterrorism Preparedness
Efforts: Protecting the Public's
Health**

Statement of
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Good morning, Mr. Chairman and members of the Committee. I am Charles A. Schable, M.S., Associate Director for Emergency Response and Preparedness, National Center for Infectious Diseases (NCID), Centers for Disease Control and Prevention (CDC), and Director of NCID's Bioterrorism Preparedness and Response Program. It is a pleasure to testify before your committee. CDC's mission, as part of the Department of Health and Human Services, is to protect the health and safety of the American people through activities that range from terrorism preparedness and response, to promoting worker safety, to preventing birth defects and limiting the spread of infectious diseases. The program I lead provides agency-wide coordination, with CDC's Office of Terrorism Preparedness and Emergency Response, to prepare our nation for and rapidly respond to a bioterrorism event anywhere in the United States. Thank you for the opportunity to join you in Kansas to testify today about CDC's bioterrorism preparedness efforts.

CDC continues to make vast strides toward achieving optimal terrorism preparedness and emergency response capacity at the federal, state and local levels and is committed to strengthening the capacity of the public health system to respond to both routine and emergent health threats. To achieve this imperative, we must continue to prepare the broader public health infrastructure to respond to a wide range of public health emergencies. Today, I will address how CDC works with state and local governments to prepare for a bioterrorist attack, explain some of the systems and tools used by CDC to detect and respond to a bioterrorist attack and describe CDC's role in response and coordination with other state and local health officials, and other health service providers.

State and Local Readiness

Today, as a result of the more than \$3 billion investment Congress and the Administration devoted over the past three fiscal years, the frontlines of public health are better prepared to detect terrorism and deal with its consequences, and there are specific initiatives underway at CDC and in each state to make America safer.

While much progress has been made strengthening the nation's defenses against biological attacks, President Bush instructed his administration to review its efforts and find new and better ways to secure America. The result of this review is Biodefense for the 21st Century, a recently approved presidential directive that builds on our past accomplishments, specifies roles and responsibilities, and integrates the programs and efforts of various communities – national security, public health, law enforcement, etc. – into a sustained and focused national effort.

In 1999, CDC began a program of providing technical assistance and funding to state, local and territorial public health departments to develop capacity to respond to terrorism events and related public health emergencies. In FY 2002, Congress appropriated a substantial increase in funding for this preparedness effort, and CDC's state and local cooperative agreement program has grown rapidly as a result. The resources provided through this cooperative agreement program support 62 grantees in the development of critical public health preparedness capacities, including preparedness planning and readiness assessment; surveillance and epidemiology; biological and chemical laboratory capacity; communications systems and information technology; health information dissemination and risk communication; and education and training.

States and localities have made substantial progress toward achieving optimal levels of preparedness since the terrorist attacks of fall 2001. For example, every state has developed an emergency preparedness and response plan and nearly 90 percent of states have trained public health practitioners in responding to terrorism. In addition, every state either has achieved or is moving toward around-the-clock capacity to send and receive critical health information, and 42 states can transmit information among state and local public health officials, hospitals, emergency departments, and law enforcement. CDC's overarching goal in this arena is to have systems in place in each community that protect citizens from infectious diseases, environmental threats, and terrorism, and these achievements represent substantial progress toward that end.

Commensurate with CDC's agency-wide emphasis on rigorous measurement of programmatic impact, CDC will begin pilot testing performance indicators in FY 2004 in an effort to better define and establish a fundamental level of public health preparedness. The data generated by these standardized indicators will provide a framework for future cooperative agreement guidance, allow for accurate evaluation of grantee progress, and enable more targeted technical assistance. Moreover, these data will make an essential contribution toward defining what it actually means to be "prepared" at the state or local level. CDC anticipates incorporating the goals, objectives, and measures of this performance indicators effort into the state and local cooperative agreement guidance for FY 2005.

CDC's Role in Response

In the event of a bioterrorist attack in the United States, CDC would provide public health advice to and support the Department of Health and Human Services in orchestrating the public health response to the attack. CDC would confirm that a biological agent had been released, identify the agent, determine how the agent was or is transmitted, and provide guidance in the development and implementation of effective control measures. CDC would assist the state and local health agencies in addition to the efforts described above, by providing federal resources in support of critical health and medical efforts, to include medical materiel housed within the Strategic National Stockpile; deploying public health subject matter experts and technicians to assist in managing efforts necessary to detect possible additional bioterrorist attacks; and providing recommendations on immunization and prophylaxis of the at risk population and guidance and recommendations for the treatment, isolation or quarantine of infected individuals. CDC would provide recommendations related to occupational safety issues for first responders and work on risk communication issues related to public health.

Systems and Tools

An important element to successful defense against any threat to the nation's public health, whether naturally occurring or deliberately caused, continues to be accurate, early recognition of the problem.

Disease surveillance systems can prepare the nation for potential terrorist threats. "Disease surveillance systems" or disease detection systems, address one important aspect of our nation's overall public health preparedness. CDC, in collaboration with

our federal, state, and local partners is working to build systems that can: (1) rapidly detect an event in our communities; (2) mobilize the appropriate response to contain the event, and (3) ensure affected communities quickly return to a sense of normalcy. These are what we refer to as our foundations of public health readiness.

National disease detection can best be described as the ongoing collection, analysis and dissemination of public health data related to illness and injury. These ongoing data collection and analysis activities enable public health officials to detect disease early, thus resulting in faster intervention to control and contain the consequences created by the causative agents. Without these early detection systems, the consequences of outbreaks of infectious disease and human exposures to agents such as chemicals and radiation would take a much greater toll by way of increased illness, injury, and in some cases death. Recent events, such as the SARS, monkeypox and avian influenza outbreaks, have underscored the essential role early detection systems play in mobilizing rapid response. Detection of a disease almost always occurs at the local level where health care professionals encounter patients seeking medical assessment or treatment. A clinician's ability to quickly recognize and identify symptoms of unusual illnesses on the frontline has been critical to the CDC's ability to recognize unfolding disease events and implement containment measures to prevent further spread of disease, thus mitigating further harm to the public.

Awareness and diagnosis of a condition by a clinician or laboratory is a key element of our current disease detection systems. Clinicians and laboratories report diseases to state and local health departments, which in turn share information with CDC. CDC

works with its public health partners to define conditions that should be reported nationally. Health departments share these definitions and guidelines with health care providers, infection control practitioners, emergency department physicians, laboratorians, and other members of the health care system to ensure accurate and timely reporting.

Many local reporters of disease incidence still report to public health authorities on paper via facsimile. If a case of illness is particularly unusual or severe (such as a case of anthrax), the local health care worker may call the local health department immediately to report the case. Current reporting systems are largely paper-based and burdensome to both providers and health departments, often resulting in reports which are neither complete nor timely. In addition to initial detection, these detection and reporting systems play a pivotal role in the detection of subsequent cases and help support the management of the event once a response/investigation are initiated. Such information is vital to coordinating response decisions, which ultimately lead to the containment of an outbreak.

A comprehensive detection and reporting system requires a strong foundation at all levels of local, state, and federal public health agencies. CDC has been working with state and local health agencies for many years to build the public health infrastructure to improve disease detection and reporting systems.

Some examples of how states use their bioterrorism funding include:

- Initiating implementation of a secure web-based disease detection and reporting system to improve the timeliness and accuracy of disease reporting.
- Implementing a new hospital tracking system to detect possible outbreaks by monitoring the number of patient admissions and ambulance diversions at hospitals. This system provides a way for hospitals to obtain instant messages and alerts.
- Developing early warning systems based on symptom data from emergency departments to detect unusual patterns of illness and automatically alert hospitals and public health agencies when the incidence of disease exceeds a critical threshold. Use of such early warning systems might enable the earliest possible response and intervention before an outbreak or epidemic spreads.

Other related activities useful for early detection of emerging infections or other critical biological agents include CDC's Emerging Infections Programs (EIP). Through the EIP, state and local health departments receive funds to conduct population-based surveillance that goes beyond their routine function to develop "next generation" surveillance science, and often involves partnerships among public health agencies and academic medical centers. In addition, CDC has established networks of clinicians that serve as "early warning systems" for public health by providing information about unusual cases encountered in the clinical practices. As noted earlier, these

relationships, particularly between health care providers and local health departments, are the foundation on which disease detection systems operate.

Public Health Information Network

For many years CDC has made significant achievements in building or enabling state and local health agencies to build information systems that support the practice of public health. However, many of these systems operate in isolation, not capitalizing on the potential for a cross-fertilization of data exchange. A crosscutting and unifying framework is needed to better integrate these data streams for early detection of public health issues and emergencies. The Public Health Information Network (PHIN) provides this framework. Through defined data, vocabulary standards and strong collaborative relationships, the PHIN will enable consistent collection and exchange of response, health, and disease tracking data among public health partners. Ensuring the security of this information is critical as is the ability of the network to work reliably in times of national crisis. PHIN encompasses four key components: (1) detection and monitoring; (2) analysis and interpretation; (3) information dissemination and knowledge management; and (4) public health response. Each of these components is briefly described below.

Public health information systems must support functions that include:

- Early event detection - BioSense (described later in this testimony) is being developed to support early event detection activities associated with a possible bioterrorism threat. Regional health data will be sent to

authorized health officials detailing health trends that could be related to a possible bioterrorism attack.

- Routine public health surveillance - The National Electronic Disease Surveillance System (NEDSS) supports routine surveillance activities associated with the rapid reporting of disease trends to control outbreaks. The NEDSS platform allows states to enter, update and electronically transmit demographic and notifiable disease data.
- Secure communications among public health partners - The Epidemic Information Exchange, or Epi-X, technology allows for the secure exchange of communications among participating public health partners via the web by providing up-to-the-minute information, reports, alerts, and discussions about terrorist events, toxic exposures, disease outbreaks, and other public health events.
- Management and dissemination of information and knowledge - The Health Alert Network's architecture upgraded the capacity of state and local health agencies to communicate different health threats such as emerging infectious and chronic diseases, environmental hazards, as well as bioterrorism related threats.
- Other functions include - Analysis and interpretation of relevant public health data and public health response systems.

PHIN will provide the framework for these functions to serve as part of an integrated and interoperable network critical in establishing a more effective public health system.

Since the majority of the data management needs come after disease is detected, CDC through PHIN is investing in information systems to support our public health response teams and our Director's Emergency Operations Center (DEOC) in Atlanta and to assist state and local health agencies in tracking and managing vital public health information before, during, and after an event has occurred. CDC's DEOC, which opened in 2003, serves as the centralized facility for collaboration to gather and disseminate information to ensure a timely, coordinated and effective public health response.

Biosurveillance Initiative

Recognizing the need to increase our current disease surveillance and detection capabilities, the President, on February 3, 2004, issued Homeland Security Presidential Directive 9 (HSPD-9), which states in part:

“The Secretary of Homeland Security shall coordinate with the Secretaries of Agriculture, Health and Human Services, and the Administrator of the Environmental Protection Agency, and the heads of other appropriate Federal departments and agencies to create a new biological threat awareness capacity that will enhance detection and characterization of an attack.”

CDC's role in this biosurveillance initiative focuses on human health and involves three distinct but interrelated elements. The first is BioSense, a state-of-the-art, multi-jurisdictional data sharing program to facilitate surveillance of unusual patterns or clusters of disease around the country. This data sharing effort will support early detection of potential terrorism events while minimizing the reporting burden for state and local health departments and clinical personnel.

The second element of the initiative centers on the addition and expansion of quarantine stations at U.S. ports of entry and assigning multidisciplinary teams of quarantine officers, public health advisors, epidemiologists, and information technicians to these sites. This effort will assure effective monitoring of U.S. and international regulatory requirements for travelers, rapid communication of disease intelligence information to federal, state, local and international partners, and consistent supervision of clinical and research material movement through ports of entry.

The Laboratory Response Network, which serves as a point of integration for federal, state, local and territorial laboratories to ensure rapid and proficient laboratory diagnosis of emerging bioagents and environmental contaminants, is the third and final component of the biosurveillance initiative. Additional resources in FY 2005 will allow the Laboratory Response Network to expand its reach into food safety and animal diagnostic labs, thereby strengthening the nation's laboratory infrastructure for timely and accurate reporting of a potential bioterrorism attack.

The biosurveillance initiative is part of an interagency effort that crosses multiple sectors, including food supply, environmental monitoring, and human health surveillance, and its benefits will be felt in all state and local health departments. By integrating these otherwise isolated data sources, potential public health emergencies that may have gone undetected can be identified more rapidly. Through the biosurveillance initiative and ongoing capacity-building efforts at the state and local levels, the FY 2005 budget request will continue to enhance frontline emergency preparedness.

Conclusion

CDC is committed to working with federal, state and local partners to protect the nation's health. Our best public health strategy against disease is the development, organization, and enhancement of public health disease detection systems, tools, and the people needed to wield them. The astute clinician remains the critical link in disease detection and reporting. The first case of West Nile in 1999, and the first case of anthrax reported in early October 2001, were identified by astute clinicians. Training and education of these front-line health protectors remain a high priority for CDC and will continue to be a priority as we strive to improve all components of the nation's disease detection systems.

While we have made substantial progress towards enhancing the nation's capability to rapidly detect disease within our communities, improving our response and containment strategies, and developing plans to recover from tragic events, much remains to be done. CDC is very grateful for the congressional support received to date and looks

forward to continuing to work with Congress and Members of this committee as we strive to protect the public's health from terrorism and other public health emergencies.

Thank you for the opportunity to testify on this most important topic. At this time I would be happy to answer any questions.